UPTAKE CADMIUM (Cd^{2+}) BY $ZnAlCO_3$ HYDROTALCITE

AZINYANA BINTI SHAWAL

Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Chemistry
in the Faculty of Applied Sciences
Universiti Teknologi MARA

NOVEMBER 2007

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

UPTAKE CADMIUM (Cd^{2+}) BY $ZnAlCO_3$ HYDROTALCITE

Hydrotalcite is also known as layered double hydroxides (LDH) has an ability as adsorbent to adsorb metals such as cadmium. Its potential is depends on their interlayer ion that can hold and remove the cadmium metals. In this study, the ZnAl-CO_3-HT was chosen to remove cadmium and it was prepared by co-precipitation method. Characterization of LDH was performed using FTIR. The uptake of cadmium was monitored by ICP.The adsorption studies were carried out by varying the parameters which include contact time, initial Cd concentration, initial pH, and adsorbent doze The adsorption data fit both Langmuir and Freundlich isotherm. The Langmuir isotherm was better fitted to the data experiment. The adsorption capacity was found to be 6.618 mg/g.